what longer bombardment around midnight and the separated trans-einsteinium fraction was placed in a counter for an overnight alpha pulse analysis. I had hooked up a special circuit that would also record the pulse height of the "big kick" that would come from any spontaneous fission that might occur. This circuit was connected to a large chart recorder and we left for the night.

In the morning a look at the chart showed two very high energy events that could only come from spontaneous fissions, and they were separated by a few hours from one another and the end of the bombardment. Just these two events in all the bombardments that we had made--what did they mean? I was very bold and proposed that we had produced an electron-capturing isotope of element 101 decaying to element 100 which then underwent spontaneous fission decay with a half-life of a few hours. The mass number would be 256.

This hypothesis completely changed our whole course of action. Up to this point we had assumed that the isotopes of element 101 that we would make would be short-lived alpha emitters. There was no way of knowing that they would be highly hindered for alpha decay. And now we had the possibility of finding an electron-capturing nuclide decaying to one undergoing spontaneous fission with both nuclides having reasonable half-lives. This was a really wild lucky guess considering that our only evidence were the two "big kicks."

Our strategy now was to assume that the $^{256}101$ isotope had a half-life of about an hour and the ^{256}Fm isotope a half-life of several hours. A number of bombardments were then made and the successive element 101 fractions combined and placed in the alpha grid chamber so that we could analyze for high energy events. (In later experiments we used a group of counters that counted only fissions to obtain a complete chemical elution curve.) In the film, you saw a